ABSTRACT OF THE DISCLOSURE

A bioptical holographic laser scanning system employing a plurality of laser scanning stations about a holographic scanning disc having scanning facets with high and low elevation angle characteristics, as well as positive, negative and zero skew angle characteristics which strategically cooperate with groups of beam folding mirrors having optimized surface geometry characteristics. The system has an ultra-compact construction, ideally suited for space-constrained retail scanning environments, and generate a 3-D omnidirectional laser scanning pattern between the bottom and side scanning windows during system operation. The laser scanning pattern of the present invention comprises a complex of pairs of quasi-orthogonal laser scanning planes, which include a plurality of substantially-vertical laser scanning planes for reading bar code symbols having bar code elements (i.e. ladder-type bar code symbols) that are oriented substantially horizontal with respect to the bottom scanning window, and a plurality of substantially-horizontal laser scanning planes for reading bar code symbols having bar code elements (i.e. picket-fence type bar code symbols) that are oriented substantially vertical with respect to the bottom scanning window.